

**REMARKS**

Applicants wish to thank the Examiner for indicating that claims 10, 12-15, 18 and 21-25 would be allowable if placed into independent form.

Claims 1, 3-4, 16, 19-20 and 34-36 were rejected under 35 U.S.C. §102(a) as being anticipated by Kim et al. (“Kim”). Claims 2, 5-9, 11, 26-28, and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in view of Banerjee et al. (“Banerjee”). Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim. Claims 29 and 31-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and Banerjee in further view of Jukan et al. (“Jukan”). Claim 37 was rejected under 35 U.S.C. §103 as being unpatentable over Kim in view of Levandovsky et al. (“Levandovsky”). Applicants respectfully disagree and traverse these rejections for at least the following reasons.

**The Section 102 Rejections**

Each of claims 1, 3, 4, 16, 19, 20 and 36 includes the feature of, among other things, “engineering a plurality of routes” between a source and destination node where “each route is capable of carrying a signal from the source to destination node with and without regeneration.”

It is respectfully submitted and reiterated that Kim does not disclose or suggest the engineering of such routes as is required by claims 1, 3-4, 16, 19, 20 and 36. In this most recent Office Action, the Examiner again refers to FIG. 1 of Kim as supporting a disclosure of a plurality of routes. However, FIG. 1 clearly shows a single route which may contain a plurality of nodes. However,

a plurality of nodes in a single path is not tantamount to a disclosure of a plurality of routes or suggestive a plurality of routes.

The Examiner alleges that the single route, multiple node design in FIG. 1 of Kim is equivalent to the “link paths” and “viable regenerator paths” disclosed in the specification and depicted in FIGs. 5A and 5B.

Initially, Applicants note that neither “link paths” nor “viable regenerator paths” are a part of claim 1.

In any event, it is clear to the Applicants and to any reasonable artisan that the “plurality of routes” claimed in claim 1 and shown in FIGs. 5A and 5B (e.g., 71 and 72 in FIG. 5A; all of the routes shown in FIG. 5B) are just that; a plurality (more than one) of routes. Kim, in contrast, depicts a single route.

In addition, Kim’s single route requires regenerators while each route engineered in accordance with claims 1, 3, 4, 16, 19, 20 and 36 of the present invention may carry a signal between a source and destination with and without regeneration.

With respect to claims 34 and 35, Applicants respectfully submit that Kim does not disclose or suggest a method for automatically switching and routing a connection over a reconfigurable photonic network which comprises, among other things, maintaining updated information on status and operation parameters of a bank of wavelength-converter/regenerator devices connected in stand-by at a plurality of switching nodes of a photonic network, investigating the availability of said devices to locate a device based on updated information

and switching a device into a communication route according to a current performance parameter of a communication route, as in claims 34 and 35 of the present invention. Accordingly, Applicants additionally request allowance of claims 34 and 35.

Accordingly, Applicants request withdrawal of the pending rejections and allowance of claims 1, 3-4, 16, 19, 20 and 34-36.

**The Section 103 Rejections Based on Kim and Banerjee et al. ("Banerjee")**

Claims 2, 5-9, 11, 26-28, and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in further view of Banerjee. Applicants respectfully disagree and traverse this rejection for at least the following reasons.

As the Office Action states, Kim "does not teach constructing N valid link paths." Applicants believe that Kim does not disclose or suggest "constructing 'n' valid link paths" or "configuring 'm' groups of routes" as is required by claims 2, 5-9, 11, 26-28 and 30. To overcome this deficiency, the Examiner relies on Banerjee.

Initially, Applicants note that Banerjee does not overcome the differences of Kim discussed above and, therefore, to the extent claims 2, 5-9, 11, 26-28 and 30 depend on either one of claims 1, 3, 4, 16, 19, 20 or 36 they are patentable over the combination of Kim and Banerjee.

Continuing neither Kim nor Banerjee, taken separately or in combination, suggests the construction of 'n' valid link paths connecting a

source node and destination node nor the configuring of 'm' groups of routes corresponding to a respective associated link path, as in the claims of the present invention. As was stated above, Kim is directed at selecting a single path between a source and destination node. Turning to Banerjee, the "alternate shortest paths" disclosed therein have nothing at all to do with the construction of 'n' valid link paths which are used to configure 'm' groups of routes. Rather, these alternate shortest paths are used as part of a linear program (LP) formulation. This formulation is later randomly rounded and used as part of a "graph coloring" technique to minimize the number of wavelengths which are assigned to a given route. In sum, the alternate, shortest paths in Banerjee are not used to configure 'm' groups of routes, as is required by the claims of the present invention.

In addition, Applicants respectfully submit that there is no suggestion or motivation in Kim or Banerjee to combine one with the other. The problems of wavelength assignment and regenerator configuration are not synonymous. A technique used to assign wavelengths to a given path would not be used by one of ordinary skill in the art to assign regenerators, or vice versa. Accordingly, Applicants respectfully request withdrawal of the pending rejections and allowance of claims 2, 5-9, 11, 26-28 and 30.

**The Section 103 Rejection of Claim 17**

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim.

As the Office Action states, Kim does not teach to “declare a best path ...,” as is required by claim 17. In addition, Applicants note that claim 17 depends on claim 16 which further depends on claims 3 and 1. Applicants respectfully submit that claim 17 is patentable over Kim for the reasons given above with respect to claims 1, 3 and 16.

**The Section 103 Rejections of Claims 29, and 31-33**

Claims 29, and 31-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and Banerjee and further in view of Jukan et al. (“Jukan”). As the Office Action states, neither Kim nor Banerjee discloses or suggests “user defined performance and cost constraints”, as is required by claim 29. In addition, Applicants respectfully submit that claim 29 is patentable over Kim and Banerjee for the reasons given above with respect to claims 2, 5-9, 11, 26-28 and 30. Accordingly, Applicants respectfully request that the rejection of claim 29 be withdrawn and that claim 29 be allowed.

With respect to claims 31-33, Applicants respectfully submit that these claims are patentable over the combination of Kim, Banerjee and Jukan because these claims all depend on claim 26 and Jukan does not overcome the differences of Kim and Banerjee discussed above with respect to claim 26. Accordingly, these claims are patentable over the combination of Kim, Banerjee and Jukan for the reasons given above with respect to claim 26.

**The Section 103 Rejection of Claim 37**

Claim 37 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in view of Levandovsky et al. (“Levandovsky”). Applicants respectfully disagree and traverse this rejection for at least the following reasons.

Claim 37 depends on claim 36 which requires “a plurality of routes” and that each route be “capable of carrying a signal from [a] source to destination node with and without regeneration.” As set forth above, Kim does not disclose or suggest either of these features, nor does Levandovsky overcome these deficiencies. In addition, as the Office Action states Levandovsky does not disclose or suggest selecting an advance path or a plurality of routes serving a connection based on estimating an end-to-end performance parameter for each route and ordering said routes according to said performance parameters. It is respectfully submitted that even if Levandovsky teaches an evaluation of a route based on its bit error rate (BER), neither Kim nor Levandovsky discloses or suggests the two features discussed above.

Accordingly, Applicants respectfully request withdrawal of this rejection and allowance of claim 37.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John E. Curtin at the telephone number of the undersigned below.

In the event this Response does not place the present application in condition for allowance, applicant requests the Examiner to contact the undersigned at (703) 668-8000 to schedule a personal interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By

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